IN THE CLAIMS:

Status of the listed claims

1. (Original) A rapid method of preparing a stem cell-biomatrix for use in tissue and organ treatment or repair comprising:

a) admixing a stem cell preparation with a physiologically acceptable matrix material to form a stem cell matrix; and

b) incubating the stem-cell matrix of step a *in vitro* for less than about 12 hours prior to use in tissue or organ treatment or repair in a recipient.

2. (Original) The method according to claim 1, wherein the stem cells are autologous to the recipient.

3. (Original) The method according to claim 1, wherein the stem cells are allogeneic to the recipient.

4. (Original) The method according to claim 1, wherein the physiologically acceptable matrix material is absorbable or non-absorbable.

5. (Original) The method according to claim 1 or claim 4, wherein the matrix material is selected from the group consisting of small intestine submucosa (SIS), crosslinked alginate, bioadhesives, hydrocolloid, collagen gel, collagen sponge, polyglycolic acid (PGA) mesh, polyglactin (PGL) mesh, fleeces and dead de-epidermized skin equivalents in one or more layers.

6. (Original) The method according to claim 1, wherein homogeneous or heterogeneous populations of stem cells are admixed with the matrix material.

7. (Original) The method according to claim 1 or claim 6, wherein the stem cells are obtained from tissues selected from the group consisting of bone marrow, muscle, adipose, liver, heart, lung and nervous system.

8. (Original) The method according to claim 7, wherein the tissues are selected from the group consisting of adult, embryonic or fetal tissues.

9. (Original) The method according to claim 1 or claim 6, wherein the stem cells are obtained from muscle.

10. (Original) The method according to claim 9, wherein the stem cell matrix is contractible.

11. (Original) The method according to claim 1, wherein the stem cells are introduced into the physiologically acceptable matrix material so as to deposit from about 2.5×10^3 to about 1×10^6 stem cells in the matrix material.

12. (Original) The method according to claim 11, wherein the stem cells are introduced into the physiologically acceptable matrix material so as to deposit from about 5×10^3 to about 1×10^6 stem cells in the matrix material.

13. (Original) The method according to claim 1, wherein the stem cells are introduced into the physiologically acceptable matrix material so as to deposit about 1×10^5 stem cells per 1 cm^2 of matrix.

14. (Original) The method according to claim 1, wherein the stem cells are incubated with the matrix material *in vitro* for less than about 3 hours prior to being used for tissue or organ repair.

15. (Original) The method according to claim 1, wherein the stem cells are incubated with the matrix material *in vitro* for less than about 1 hour prior to being used for tissue or organ repair.

16. (Original) The method according to claim 1, wherein the stem cells are incubated with the matrix material *in vitro* for less than about 30 minutes prior to being used for tissue or organ repair.

17. (Original) The method according to claim 1, wherein the stem cells are incubated with the matrix material *in vitro* from about 5 seconds to about 30 minutes prior to being used for tissue or organ repair.

18. (Original) The method according to claim 1, wherein the tissue or organ repair are selected from the group consisting of wound healing, surgical incision repair, tissue augmentation, organ augmentation, smooth muscle repair, non-smooth muscle repair and blood vessel repair.

19. (Original) The method according to claim 1, wherein the stem cells used for tissue or organ repair are attached to the matrix material using biological adhesives.

20. (Original) The method according to claim 1, wherein the stem cells alter biomechanical properties of the matrix material.

21. (Original) A composition comprising stem cells and a physiologically acceptable matrix material forming a stem cell matrix prepared according to claim 1.

22. (Original) The composition according to claim 21, wherein the stem cell matrix is contractible.

23. (Original) A rapid method of preparing a stem cell-biomatrix for use in tissue and organ treatment or repair comprising:

a) admixing a stem cell preparation with a first physiologically acceptable matrix material to form a first stem cell-matrix combination;

b) introducing the first stem cell-matrix combination of step (a) onto a second physiologically acceptable matrix material to form a second stem cell-matrix material, wherein the first stem cell-matrix combination and the second physiologically acceptable matrix material are incubated *in vitro* for between about 5 seconds and 1 hour; and

c) applying the second stem cell-matrix material of step (b) on or in a tissue or organ site in a recipient.

24. (Original) The method according to claim 23, wherein the stem cells are autologous to the recipient.

25. (Original) The method according to claim 23, wherein the stem cells are allogeneic to the recipient.

26. (Original) The method according to claim 23, wherein the first and second physiologically acceptable matrix materials are absorbable or non-absorbable.

27. (Original) The method according to claim 23, wherein the first physiologically acceptable matrix material is selected from the group consisting of crosslinked alginate, hydrocolloid, collagen gel and bioadhesives; and wherein the second physiologically acceptable matrix material is selected from the group consisting of small intestine submucosa (SIS), collagen sponge, polyglycolic acid (PGA) mesh, polyglactin (PGL) mesh, fleeces and dead de-epidermized skin equivalents in one or more layers.

28. (Original) The method according to claim 23, wherein homogeneous or heterogeneous populations of stem cells are admixed with the first or second matrix material.

29. (Original) The method according to claim 23, wherein the stem cells are obtained from tissues selected from the group consisting of bone marrow, muscle, adipose, liver, heart, lung and nervous system.

30. (Original) The method according to claim 29, wherein the tissues are selected from the group consisting of adult, embryonic and fetal tissues.

31. (Original) The method according to claim 23, wherein the stem cells are introduced into the physiologically acceptable matrix material so as to deposit from about 2.5×10^3 to about 1×10^6 stem cells in the matrix material.

32. (Original) The method according to claim 31, wherein the stem cells are introduced into the physiologically acceptable matrix material so as to deposit from about 5×10^3 to about 1×10^6 stem cells in the matrix material.

33. (Original) The method according to claim 23, wherein the stem cells are introduced into the physiologically acceptable matrix material so as to deposit about 1×10^5 stem cells per 1 cm^2 of matrix.

34. (Original) The method according to claim 23, wherein the second stem cell-matrix material functions at the tissue or organ sites in medical procedures selected from the group consisting of wound healing, surgical incision repair, tissue augmentation, organ augmentation, smooth muscle repair, non-smooth muscle repair and blood vessel repair.

35. (Original) The method according to claim 23, wherein the stem cells alter biomechanical properties of the second matrix material.

36. (Original) The method according to claim 23, wherein the stem cell matrix is contractible.

37. (Original) The method according to claim 1 or claim 23, wherein the stem cell-matrix is applied to a tissue or organ site by a mode selected from the group consisting of spraying, painting, coating and spreading.

38. (Original) A preparation of stem cells and a physiologically acceptable substrate material forming an implantable and innervatable three-dimensional scaffolding for tissue and organ repair.

39. (Original) The preparation according to claim 38, wherein the substrate material is small intestine submucosa (SIS).

40. (Original) The preparation according to claim 38, wherein stem cells are autologous to a recipient of the preparation.

41. (Original) The preparation according to claim 38, wherein the stem cells are allogeneic to a recipient of the preparation.

42. (Original) The preparation according to claim 38, wherein the stem cells are obtained from muscle.

43. (Original) The preparation according to claim 38, wherein the stem cells are obtained from skeletal muscle.

44. (Original) The preparation according to claim 42 or claim 43, comprising a three-dimensional muscle replacement having muscle contractility.

45. (Original) The preparation according to claim 44, further wherein the substrate material is small intestine submucosa (SIS).

46. (New) The composition according to claim 21, wherein the stem cells are autologous to a tissue or organ undergoing treatment or repair.

47. (New) The composition according to claim 21, wherein the stem cells are allogeneic to a tissue or organ undergoing treatment or repair.

48. (New) The composition according to claim 21, wherein the physiologically acceptable matrix material is absorbable or non-absorbable.

49. (New) The composition according to claim 21, wherein the matrix material is selected from the group consisting of small intestine submucosa (SIS), crosslinked alginate, bioadhesives, hydrocolloid, collagen gel, collagen sponge, polyglycolic acid (PGA) mesh, polyglactin (PGL) mesh, fleeces and dead de-epidermized skin equivalents in one or more layers.

50. (New) The composition according to claim 21, wherein homogeneous or heterogeneous populations of stem cells are admixed with the matrix material.

51. (New) The composition according to claim 21, wherein the stem cells are obtained from tissues selected from the group consisting of bone marrow, muscle, adipose, liver, heart, lung and nervous system.

52. (New) The composition according to claim 51, wherein the tissues are selected from the group consisting of adult, embryonic or fetal tissues.

53. (New) The composition according to claim 21, wherein the stem cells are obtained from muscle.

54. (New) The composition according to claim 21, wherein the stem cells are introduced into the physiologically acceptable matrix material so as to deposit from about 2.5×10^3 to about 1×10^6 stem cells in the matrix material.

55. (New) The composition according to claim 54, wherein the stem cells are introduced into the physiologically acceptable matrix material so as to deposit from about 5×10^3 to about 1×10^6 stem cells in the matrix material.

56. (New) The composition according to claim 21, wherein the stem cells are introduced into the physiologically acceptable matrix material so as to deposit about 1×10^5 stem cells per 1 cm^2 of matrix.

57. (New) The composition according to claim 21, wherein the stem cells are incubated with the matrix material *in vitro* for less than about 3 hours prior to being used for tissue or organ repair.

58. (New) The composition according to claim 21, wherein the stem cells are incubated with the matrix material *in vitro* for less than about 1 hour prior to being used for tissue or organ repair.

59. (New) The composition according to claim 21, wherein the stem cells are incubated with the matrix material *in vitro* for less than about 30 minutes prior to being used for tissue or organ repair.

60. (New) The composition according to claim 21, wherein the stem cells are incubated with the matrix material *in vitro* from about 5 seconds to about 30 minutes prior to being used for tissue or organ repair.

61. (New) The composition according to claim 21, wherein the tissue or organ repair is selected from the group consisting of wound healing, surgical incision repair, tissue augmentation, organ augmentation, smooth muscle repair, non-smooth muscle repair and blood vessel repair.

62. (New) The composition according to claim 21, wherein the stem cells used for tissue or organ repair are attached to the matrix material using biological adhesives.

63. (New) The composition according to claim 21, wherein the stem cells alter biomechanical properties of the matrix material.